IDM/FIRSTVUE Interface

User's Manual - Table of Contents

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IDM/FIRSTVUE Interface

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User's Manual - Overview of Project

The Project

Fisher Controls and Intergraph have worked together to develop an electronic interface between Intergraph's Instrument Data Manager (IDM) software and Fisher's FIRSTVUE and FIRST valve sizing software.

The Process

The process will always start in IDM. The IDM user will enter Service Conditions and other pertinent data. He will then export the data to a file and send it to the FIRSTVUE user (usually as an attachment to an e-mail).

The FIRSTVUE user will first run the file through an edi translator (St. Paul Software's SpediTran software) in order to translate it into a format that FIRSTVUE can use. He will then import the file into FIRSTVUE, size and select the valve and any accessories, and export the data to a file. Finally, the FIRSTVUE user will run the file back through the edi translator and send it back to the IDM user (again via e-mail).

The IDM user will import the file back into IDM to complete the process.

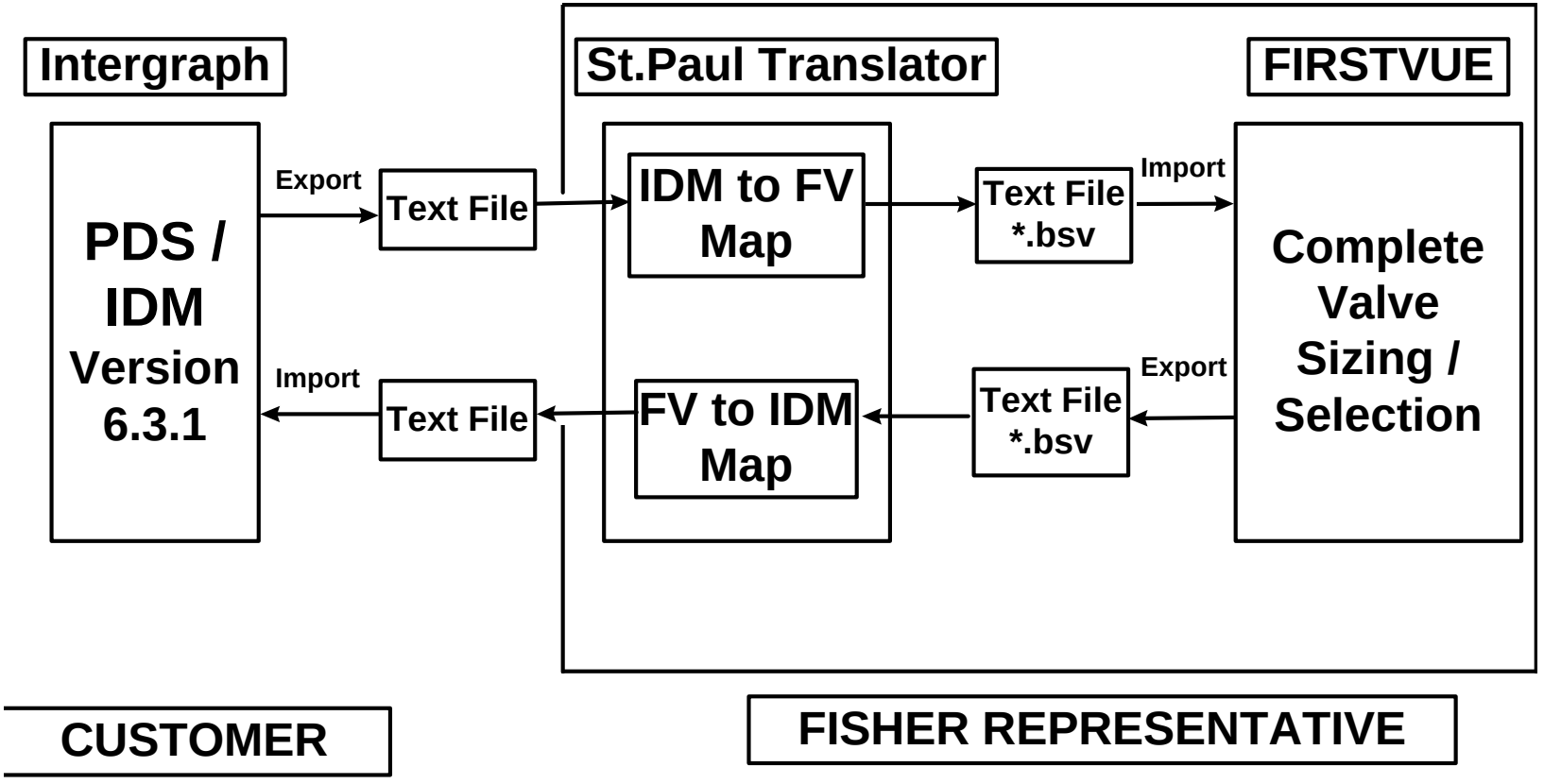
The Scope

The scope of the data to be exchanged between IDM and FIRSTVUE revolves around the ISA S20.50 Control Valve Spec Sheet. All devices and fields on the Spec Sheet will be sent from IDM to FIRSTVUE. All Spec Sheet devices and fields will be sent back to IDM except for Header and Revision fields.

The Benefits

The electronic exchange of data between IDM and FIRSTVUE will save time for users of both systems by eliminating the re-keying of data. It will also reduce data entry errors for both users.

FIRSTVUE™, IDM, AND ST. PAUL SOFTWARE



IDM/FIRSTVUE Interface

User's Manual - Software Requirements

Overview

This section lists the Software required to execute the IDM/FIRSTVUE Interface.

Software Required

IDM User

A. Intergraph IDM version 6.3.1 or newer. This version is scheduled for release in June 1998. Beta versions may be available before then. When installing the 6.3.1 version, the user needs to select the option to install Fisher Controls reference data.

FIRSTVUE User

A. Fisher FIRSTVUE version 1.0L or newer. This version will be released on the June 1998 CD. Beta versions will be made available to Representatives who need it sooner. **The IDM interface also works equally well with Fisher FIRST (June 1998 release or newer). While most of the associated documentation refers to FIRSTVUE, please remember that the interface is identical in FIRST.**

B. SpediTran edi translator made by St. Paul Software. To obtain SpediTran, see the *Contacts* section of this document. Be sure to inquire about special pricing for Fisher Controls and also ask about Single vs. Multi-user licenses.

C. Tranlation maps, cross reference files, and other files required for the interface. These files will be delivered on the June 1998 CD. Again, Beta versions of these files will be made available to Representatives needing them sooner.

Software Installation

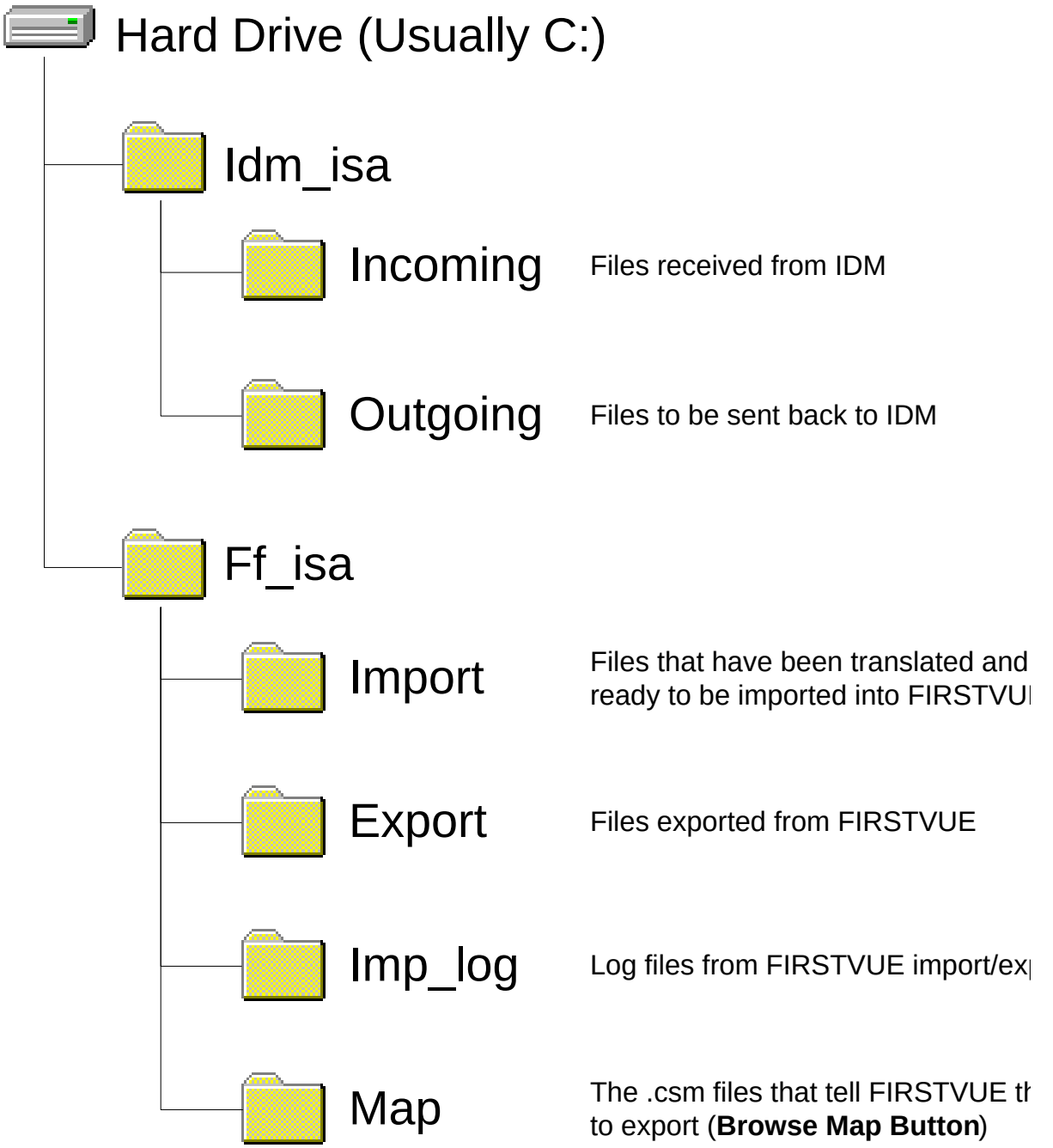
See the *IDM/FIRSTVUE Interface - Installation Guide* (Firstvue\IDMData\install.doc on the CD) for instructions on installing the software required by the FIRSTVUE user.

File Comparison Utility (Optional)

One of the biggest issues concering electronic exchange of specification data is revision control. To address this issue, Fisher Controls has developed a File Comparison Utility. This utility compares a file to be imported with a file that was exported and identifies data that has changed. The utility can be used BEFORE importing data back into IDM or FIRSTVUE. Contact Fisher Controls to obtain this free utility.

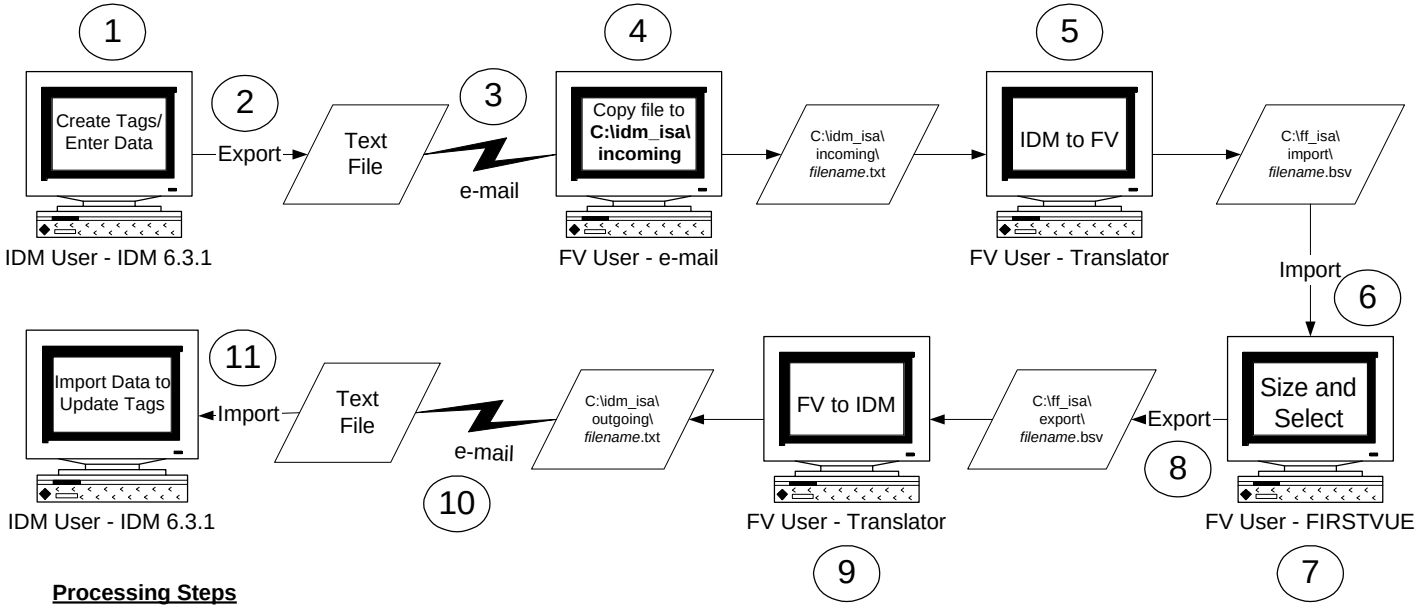
IDM/FIRSTVUE Interface
User's Manual - Default Directories

The following diagram shows the default directories used to store files during the interface process. It is provided here for reference. These directories will be discussed in more detail in following sections of this manual.


Hard Drive (Usually C:)
Idm_isa
Incoming
Files received from IDM
Outgoing
Files to be sent back to IDM
Ff_isa
Import
Files that have been translated and
ready to be imported into FIRSTVU
Export
Files exported from FIRSTVUE
Imp_log
Log files from FIRSTVUE import/ex
Map
The .csm files that tell FIRSTVUE t
to export (**Browse Map Button**)

IDM/FIRSTVUE Interface

User's Manual - Process Overview



Processing Steps

1. Create Tags and enter pertinent data into IDM - IDM user
2. Export data to a text file - IDM user
3. Send file to the FIRSTVUE user - IDM user
4. Copy file to the incoming translation directory - FV user
5. Run the IDM to FV translation process - FV user
6. Import file into FIRSTVUE - FV user
7. Size and Select the valves and any accessories - FV user
8. Export data to a text file - FV user
9. Run the FV to IDM translation process - FV user
10. Send file to the IDM user - FV user
11. Import file into IDM to update tags with FIRSTVUE data - IDM user

IDM/FIRSTVUE Interface
User's Manual - Processing Steps

Overview

This section gives detail on each of the steps in the IDM/FIRSTVUE interface process.

Step 1 - Create Tags and enter pertinent data in IDM - IDM user

The process must ALWAYS start in IDM. The IDM user will create the Tags for the control valves he needs. He will then enter data on the requirements of the valve. Some of the data likely to be entered are Service Conditions and Pipeline Size. When entering data, the IDM user must follow some basic Rules so that the data will flow seamlessly into FIRSTVUE. These Rules are documented in the *Rules for IDM User* section of this manual and should be given to your IDM users.

Step 2 - Export data to a text file - IDM user

When the IDM user has finished entering data for all the control valves he needs, he will export the data to a text file. When exporting the data, he needs to select the **FIRSTVUE.exp** import description file. When naming the file he should use the standard 8.3 naming convention.

Notes:

We recommend developing naming standards that will help both IDM and FIRSTVUE users identify a file. For example, the 8 position file name may be related to the Project Name or Number, and the 3 position file extension may always be ".exp".

For this export file, and all the import/export files referred to in this document, the first record contains the field names. The remainder of the file consists of one record per valve Tag. Fields are separated (delimited) by the Vertical Bar ("|"). All files are simply text files.

Step 3 - Send file to the FIRSTVUE user - IDM user

If the FIRSTVUE user is a Fisher Representative, we envision that the file created in Step 2 will be sent to him as an attachment to an e-mail. For special cases where the IDM user and the FIRSTVUE user are at the same location, the file may be placed on a common network or handed-off via floppy disk.

Step 4 - Copy file to the incoming translation directory - FV user

When the FIRSTVUE user receives the file from IDM, he should place it in a directory on his system or network. The delivered default directory that the translator will look for a file is **C:\Idm_isa\Incoming**, so we recommended putting it there

Step 5 - Run the IDM to FV translation process - FV user

Once the file has been placed in a directory, the FIRSTVUE user will start the translation process by executing **C:\Spedi\idmtoff.bat**. The easiest way to do this is to double-click the **IDM to FV** desktop Icon.

The translation process will start by prompting for the file to translate. At the **ENTER SOUR FILE** prompt, enter the file you wish to translate. If you placed the file in the **C:\Idm_isa\Incoming** directory, you can simply enter the file name, otherwise you must ente complete Path of the file.

Once you have entered a valid file name, the translation process will continue. Several messag will flash across the screen as it runs. If the translation finishes without any errors, you will se message **"TRANSLATION SUCCESSFUL"** along with the file name that the process create the translator encounters errors, an error message will be displayed at the end of the process.

When the translator completes successfully, it places the resulting data file in the **C:\Ff_isa\In** directory. It will have the same name as the source file that you entered except that its extensi will be "**.BSV"** (BSV stands for **B**ar **S**eparated **V**alues). This is the file you will import into FIRSTVUE in the next step.

Notes:

The translation process executes the St. Paul Software SpediTran edi translator. It uses the specific IDM to FV translation map developed by Fisher Controls. This map links IDM fi to their corresponding FIRSTVUE field. It does special translations for Unit-of-Measure f and fields that do not have a 1-to-1 match between the two systems.

Step 6 - Import file into FIRSTVUE - FV user

This step imports the **".BSV"** file created in Step 5 into FIRSTVUE:

1. Select **Import ISA File** from the FIRSTVUE file menu.
2. Select the file created in Step 5.
3. Click the **Browse Map** button
4. Select the "**idm.csm"** file.
5. Verify that the **File Delimiter** is set to "|".
6. Click the **Import** button at the bottom of the window to start the import process.
7. As the import process runs, messages will appear in the Import Log. If any error messages appear, click the **Save Log** button when the import process is finished. Enter the name of a file to save the log to.
8. Click the **Close** button to close the window.

Notes:

FIRSTVUE imports items into the project you have open. If you get the error "**Warning: No Active Document**" it means that you don't have a project open. Open a project and try again.

The FIRSTVUE import process is "add-only". This means you cannot update existing items via the import. Imported items are added to the end of the open project. For example, if you are working in a project that already has 3 items, the first item you import will be set to item 4. We recommend importing into a new project so that the first item you import will be item 1.

Data is imported into two places. Sizing fields are imported into sizing. Non-sizing fields are imported as ISA Spec Sheet User Overrides. Some fields are imported into both places.

Import messages will appear in the Import Log as the import process runs. A message such as "**Tag # of Import File added to Project as Item 001**" will appear for each item that is imported. If you encounter import errors, save the Import Log as directed in Step 7 (above). Using a text editor (i.e. Notepad), open the saved log file to investigate further (the default directory for saving the logs is **C:\Ff_isa\Imp_log**). It will be up to the FIRSTVUE user to investigate and resolve all import errors. Some possible fixes include carefully editing the import file or having the IDM user fix the problem and re-send the data. There are 3 kinds error messages that you may encounter:

A. Fluid State Error - The only valid ISA Fluid States are Liquid, Gas, and Vapor. If the import encounters something else, you will see the message "**Error in Tag #. FluidState has invalid value of '*imported value*'. Defaulting to LIQUID for this item.**" As the message suggests, the item will be imported, but its Fluid State will be changed to "LIQUID".

B. Sizing Field Out of Range - If the import encounters a sizing variable that is out of range, you will see the message "**Error in Tag #. *VariableName* has an invalid field value of '*imported value*'. Value Not Set."** This item will be imported, but the value for the variable that is out of range will be blank.

C. Invalid Sizing Unit of Measure (UOM) - If the import encounters a sizing UOM that it does not recognize, you will see the message "**Tag #. *VariableName* has an invalid unit value of '*imported value*'. Import of this Line failed."** Like the message suggests, this item will NOT be imported.

Step 7 - Size and select the valves and any accessories - FV user

Before starting the sizing and selection process, we recommend printing a copy of the ISA Spec Sheet for all the imported items. Refering to this Spec Sheet will aid in the sizing and selection process by showing any customer preferences specified on the Spec Sheet.

As you select components, Spec Sheet Data will be populated. Use the User Overrides column on the ISA Spec Sheet entry screen to complete the Spec Sheet. The User Overrides column will be highlighted in BLUE where both a Data and a Override value have been specified, but do not match.

When filling out the Spec Sheet, the FIRSTVUE user must follow some basic Rules so that the data will flow seamlessly back into IDM. These Rules are documented in the *Rules for FIRSTVUE User* section of this manual.

Notes:

Non-sizing fields are imported into Spec Sheet User Overrides. On export, User Overrides always take precedence over Data that is populated during selection. Be sure to review the Spec Sheet Entry screen for all items before going to the next step.

The IDM/FIRSTVUE interface is based on the ISA S20.50 Spec Sheet. So if something does not appear on the Spec Sheet, it will probably not be sent back to IDM.

Step 8 - Export data to a text file - FV user

When the FIRSTVUE user has completed the sizing and selection process, and has reviewed the FIRSTVUE ISA Spec Sheet for each item, it is time to export the data:

1. Select **Export ISA File** from the FIRSTVUE file menu.
2. Click the **Browse Map** button
3. Select the "**idm.csm"** file.
4. Verify that the **File Delimiter** is set to "|".
5. Verify that **Only Fields in Map** is selected.
6. Verify that **Custom Names** is selected.
7. Select the items you wish to export. You can highlight just certain items, or select all items by checking the **Select All Items** box.
8. Click the **Export** button at the bottom of the window to start the export process.
9. Enter the name of the export file you wish to create. We recommend that you use the default directory (**C:\ff_isa\export**) and you use the "**.BSV**" extension.
10. As each item is exported, a message will pop up. When the process has finished, click the **OK** button to acknowledge the last message and then click the **Close** button to close the window.

Step 9 - Run the FV to IDM translation process - FV user

The FIRSTVUE user will start the translation process by executing **C:\Spedi\fftoidm.bat**. The easiest way to do this is to double-click the **FV to IDM** desktop Icon.

The translation process will start by prompting for the file to translate. At the **ENTER SOUR FILE** prompt, enter the file you just created in Step 8. If you placed the file in the **C:\Ff_isa\Export** directory, you can simply enter the file name, otherwise you must enter the complete Path of the file.

Next, at the **ENTER DESTINATION FILE** prompt, enter the name of the file you wish to cr Follow the directions on the screen for file specification options.

After you have specified a destination file, the translation process will continue. Several mess will flash across the screen as it runs. If the translation finishes without any errors, you will se message **"TRANSLATION SUCCESSFUL"** along with the file name that the process create the translator encounters errors, an error message will be displayed at the end of the process.

Notes:

The translation process executes the St. Paul Software SpediTran edi translator. It uses the specific FV to IDM translation map developed by Fisher Controls. This map links FIRST fields to their corresponding IDM field. It does special translations for fields that are "Cod Listed" in IDM and fields that do not have a 1-to-1 match between the two systems.

IDM "Code Listed" fields are fields whose values must exist on a predefined list. Think o them as drop downs that will only let you select a value from the drop down list. This is o the biggest hurdles to getting data back into IDM. For this project, we have worked closel with Intergraph to add FIRSTVUE's attribute values (for example our materials) and drop down lists to the IDM code lists.

We recommend developing naming standards that will help both IDM and FIRSTVUE use identify a file. For example, the 8 position file name may be related to the Project Name o Number, and the 3 position file extension may always be ".imp".

Step 10 - Send file to the IDM user - FV user

If the FIRSTVUE user is a Fisher Representative, we envision that the file created in Step 9 will be sent back to the IDM user as an attachment to an e-mail. For special cases where the FIRSTVUE user and the IDM user are at the same location, the file may be placed on a common network or handed-off via floppy disk.

Step 11 - Import file into IDM - IDM user

When importing the file sent to him in Step 10, the IDM user needs to select the **FIRSTVUE.imp** import description file. The IDM user can refer to IDM documentation for resolving import errors.

Notes:

The IDM import process is "update-only". This means that all valve and accessory tags must already exist in IDM for data to be imported. This is opposite of the FV "add-only" import.

Rules for IDM User

A. Do not remove or modify entries in the standard IDM code lists.

B. The delivered Create Script for the Control Valve will automatically generate an Actuator, Positioner, Enclosure, and Airset. If you want FIRSTVUE to be able to return a Solenoid, Switch, or Air Failure Valve, you will need to specifically create these devices. Should you alter your Create Script, you will need to communicate this with the FIRSTVUE user.

C. Fluid State must be Liquid, Gas, or Vapor. On import into FIRSTVUE, if something other than Liquid, Gas, or Vapor is encountered it will be changed as follows:

Fluid State from IDM	Imported into FV as:
Dense Phase	Liquid
Slurry	Liquid
Steam	Vapor
Super Critical	Vapor
all others	Liquid

D. The Units of Measure (UOM's) entered in IDM must be valid in FIRSTVUE. The valid UOM's - as they exist on IDM's standard code lists - are:

FLOW	PRESSURE	TEMPERATURE	LENGTH	VISCOSITY
lb/h	psia	degF	in	cP
kg/h	psig	degC	IN	cSt
scfh	bar (a)	K	"	SSU
MMscfd	bar (g)	degR	mm	mPa.s
scfm	kPa (a)			
Nm3/h	kPa (g)			
scfd	kg/cm2 (a)	DENSITY	AREA	
gpm(US)	kg/cm2 (g)	lb/ft^3	in^2	
l/mkg/cm2a	kg/m^3	mm^2		
m3/h	kg/cm2g		cm^2	
barrel/d	in. wc g			

E. Specific Heats Ratio (ISA Line 7) should be entered in IDM as 'k'. On import, FV will automatically convert to ISA's 'F(k)' by dividing by 1.4. On export, FV will automatically convert back to 'k' by multiplying by 1.4.

F. Travel Units (ISA Line 10) are not included in the interface. For Sliding Stem, Travel Units are assumed to be % Open. For Rotary, Travel Units are assumed to be Deg Open.

G. For both Inlet and Outlet Pipeline Dimensions, FIRSTVUE requires either Size & Schedule or Outside Diameter & Wall Thickness. IDM's corresponding fields are Nominal Diameter, Diameter Units, Schedule/Thickness, and Thickness Units. For the interface, Thickness Units will drive what is populated in FIRSTVUE. If Thickness Units are blank, Nominal Diameter will be mapped to Size, and Schedule/Thickness will be mapped to Schedule - it is **HIGHLY** recommended that Pipeline Dimensions be specified

this way (**be sure that the IDM default for Thickness Units is blank**). If Thickness Units are present, Nominal Diameter will be mapped to Outside Diameter, and Schedule/Thickness will be mapped to Wall Thickness - again this is **NOT** the preferred method. If Thickness Units are present, they must be the same as the Diameter Units.

H. The UOM's for Inlet and Outlet Pipeline Dimensions must be the same.

I. If both Body and Bonnet Material are specified, they must be the same.

J. Do not enter a Vertical Bar (|) in any data.

K. ISA Header and Revision data will NOT be imported back from FIRSTVUE.

Rules for FIRSTVUE User

A. Save all import error messages to a log file. Immediately investigate log using an editor such as Notepad.

B. The following Sizing Conditions MUST be used:

Condition 1	Minimum
Condition 2	Normal
Condition 3	Maximum
Condition 4	Other / Shut-Off (if Other is used it will be interpreted as Shut-Off)

C. If you copy an imported tag, you MUST update the IDM child tags at the bottom of the Spec Sheet screen.

D. The following FIRSTVUE Spec Sheet Override fields are Code-Listed in IDM (meaning that IDM will only except certain values):

- all fields that have a drop down list that contains the value 'SEE NOTES'
- all Unit of Measure fields
- Line 43 - Group and Div

For these fields, you must choose a value from the FV drop down list or type in a value that you KNOW exists on the IDM code list for a particular field. If the FV drop down list contains 'SEE NOTES', you can always select 'SEE NOTES' and enter the value in a spec sheet note line.

E. The following spec sheet override fields require a special entry format:

ISA Line # UOM's	Field	Entry Format	Example	Valid
13	In Pipeline Size & Schedule	Size UOM, Schedule	4 in, 80	in, mm
14	Out Pipeline Size & Schedule	Size UOM, Schedule	2.5 in, STD	in, mm
17	Valve Body Size	Size UOM	8 in	in, mm
33	Trim Size	Size UOM	1 1/2 in	in, mm
33	Rated Travel	Travel UOM	5 3/8 in	in, mm
62	Bench Range	Min-Max UOM	1.5-16.5 psig	psig, bar
67	Input Signal	Min-Max UOM	4-20 mA dc	psig, bar, mA dc, V dc

F. Accessory Note Lines 45-48 are for Solenoid Valve data. Each of these lines requires special care when entering in order to get the data imported back into IDM:

Line #	Label	Entry Rules
45	Tag:	This line contains the Solenoid Valve Tag followed by the Solenoid Valve Reset Type. Do NOT edit the Tag Number. If there is no Tag Number, do NOT enter ANY Solenoid data. The IDM user will normally specify the Reset Type only if he requires a Manual Reset.

In the rare case when you need to change the Reset Type, the valid values are: "Man Reset", "Man Reset-NVR", and "Man Reset-FH". These must be entered EXACTLY as shown here.

46	Mfg/Mod:	Enter the Manufacturer and the Model separated by a "/". If you enter a Model but no Manufacturer, you must precede the Model with a "/"
47	Type/Matl:	Select a Body Type/Body Material combination from the drop down list.
48	Rating C: V: F:	Enter the Current Rating and Units after the "C:". Valid Units are: A, mA Enter the Voltage Rating and Units after the "V:". Valid Units are: V, mV Enter the Frequency and Units after the "F:". Valid Units are: Hz Do NOT remove the "C:", "V:", and "F:" labels.

G. Do not enter data in the Actuator On/Off field (ISA Line 56), as it is not part of the interface. Instead select a drop down choice from the Modulating field.

H. If Air Fail Valve (Line 65) contains the value "NO", do NOT enter any data on this line. Otherwise, you can enter anything you wish.

Rules for FIRSTVUE User (continued)

I. The Positioner Note Line (ISA Line 73) and the Switch Note Line (ISA Line 78) will contain the associated IDM Tag Number. The Tag Number will be surrounded by Tilde's (~) to separate it from any note text that the IDM user may have entered. Do not enter data between the two tildes, as any data between the tildes is not sent back to IDM. You may enter data before the 1st tilde and/or after the 2nd tilde.

J. Do NOT enter data for the Switch (Lines 74-78) unless the Switch Tag Number appears on Note Line 78.

K. Do not enter a Vertical Bar (|) or a Double Quote (") in any data.

L. After sizing and selecting in FIRSTVUE, wipeout any undesired spec sheet overrides for each item before exporting. On export, spec sheet overrides take precedence over any valu populated by attributes or sizing.

M. When creating an export file, FIRSTVUE will default the Valve Manufacturer to "FISHER if it is blank.

IDM/FIRSTVUE Interface
User's Manual - Miscellaneous Topics

Overview

This section discusses several miscellaneous topics.

Revision Tracking

Tracking revisions and data changes will be important to the successful implementation of this interface. Good communication between the IDM user and the FIRSTVUE user will be essential. While IDM ISA Revision fields are passed from IDM to FIRSTVUE for informational purposes, they are not passed back into IDM. This is so the IDM user can remain in control of his own revisions. We recommend that the IDM user always takes a Revision just before he exports data, and right after he re-imports data. This will aid in determining what was changed by FIRSTVUE. IDM already has several useful tools for helping tracking Revisions. One of these is printing documents (i.e. Spec Sheets) with revision tracking. Your IDM user will know of other methods to help track revisions.

To further help manage revisions, Fisher Controls has developed a File Comparison Utility to compare export files with import files BEFORE data is re-imported into IDM or FIRSTVUE. This utility is very valuable in identifying changes. To get a copy of the utility, contact Fisher Controls.

Archiving

When you run the **IDM to FV** translation process, one of the things it does is copy the file you are translating (i.e. the file you received from IDM) to an Archive directory. This is so you will always have a copy of the file as it was received from IDM.

Similarly when you run the **FV to IDM** translation process, one of the things it does is copy the file you are sending back to IDM to an Archive directory. This is so you will always have a copy of the file you sent back to IDM.

The way these files are archived is that they are copied to a directory named **Archive**. The **Archive** directory is added under the file's current directory if it does not exist already. The file is copied to a ".001" extension. If a .001 version of the file already exists, it is copied to the first available numeric extension (i.e. .002, .003, etc). Example: You receive PROJ1.EXP from IDM and place it in the C:\Idm_isa\Incoming directory. When you start the **IDM to FV** translation, the file is copied to C:\Idm_isa\Incoming\Archive\PROJ1.001. If you ever receive and translate PROJ1.EXP again, it will be copied to C:\Idm_isa\Incoming\Archive\PROJ1.002, and so on.

You may want to come up with your own file naming and archiving methods. You may also want to coordinate them with your IDM user.

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User's Manual - Miscellaneous Topics

IDM/FIRSTVUE Interface

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User's Manual - Contacts

Overview

This section list individuals to contact if you have questions or need support regarding the IDM/FIRSTVUE Interface.

Ordering St. Paul Software

Carleton Perry
St. Paul Software
St. Paul, Minnesota, USA
651-603-4416
cperry@stpaulsoftware.com
Note: Be sure to inquire about special pricing for Fisher Controls and also ask about Single vs. Multi-user licenses. Also, be sure to order **Release 2.4b**.

Ordering or Installing FIRST and FIRSTVUE

Bob Maile
Fisher Controls
Marshalltown, Iowa, USA
515-754-3009
Note: Please contact Kevin Meyer before ordering any Beta software

Sales and Marketing Support

Kevin Meyer
Fisher Controls
Marshalltown, Iowa, USA
515-754-3933

Technical Support

Tim Wignall
Fisher Controls
Marshalltown, Iowa, USA
515-754-3962